

THIS MANUAL IS TO ACQUAINT YOU WITH THE OPERATION AND MAINTENANCE OF YOUR KEY DUPLICATING MACHINE.

PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE OPERATING THE MACHINE. TIME SPENT READING THESE INSTRUCTIONS WILL ASSURE YOU ACCURACY IN DUPLICATING KEYS.

THIS SEMI-AUTOMATIC KEY DUPLICATING MACHINE HAS BEEN ENGINEERED AND DISIGNED TO UNCOMPROMISING STANDARDS OF QUALITY AND PRECISION FOR LONG AND DEPENDABLE SERVICE.

WE WOULD LIKE TO TAKE THIS OPPORTUNITY TO THANK YOU FOR HAVING CHOSEN OUR MACHINE. WITH PROPER CARE IT WILL SERVE YOU WELL FOR MANY YEARS.

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SET UP PROCEDURE

Place your machine on a sturdy level table or counter top. Bolt it down securely. Four holes are located on the base for this purpose.

IMPORTANT

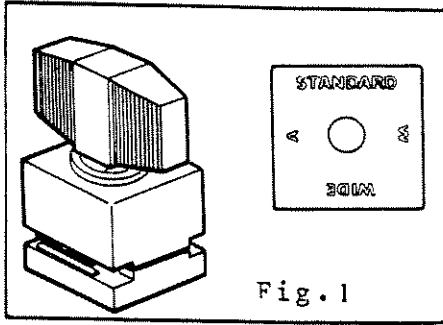
It is essential that your key duplicator be bolted down for its proper operation, to insure accuracy, and minimize wear.

Your machine has been thoroughly tested at the factory. No further adjustments should be necessary. After removing the wrapping, clean thoroughly. A 1" paint brush is handy for this purpose to periodically dust the chips out of the vise jaws and other working parts of the machine.

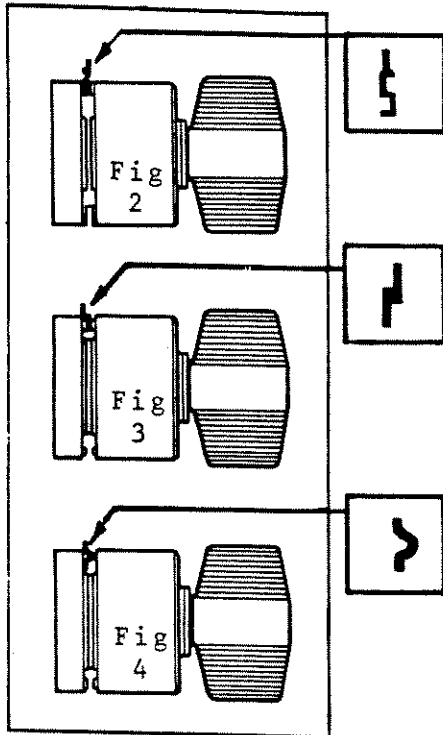
SAFETY FEATURE

This machine is equipped with a circuit breaker switch on the back of the base. This feature ensures that should there be an overload, on your motor, that it will not be damaged. To reset the switch simply push it in.

SELECTION OF JAW POSITION



Your machine is equipped with FOUR WAY JAWS THAT DO NOT REQUIRE THE USE OF ADAPTERS. (See figure 1). The following jaw positions are labelled as follows and will be referred to throughout this booklet.



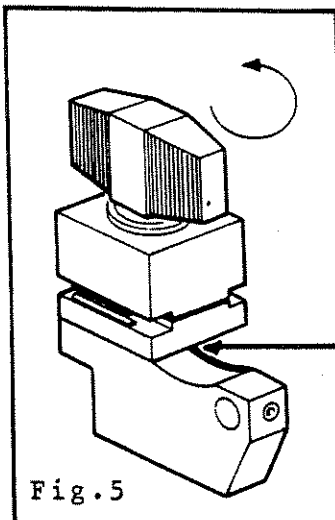
For "STANDARD" width keys. Used on most commercial keys or house keys. (See figure 2)
EXAMPLE: Dominion, Schlage, Weiser etc.

For "WIDE" blade large commercial key blanks, for some European locks which are cut on both sides, where the center milling of the key can rest on the top of the jaw as illustrated. (See figure 3)
EXAMPLE: Ford, Chicago, etc.

Use "A" in duplicating of Schlage "A" double sided keys, some European and Japanese automobile keys as well as other applications where a firmer grip is needed. (See figure 4)

Use "W" in duplicating of Schlage "W" double sided keys. Center of key is held on ridge in jaw shown for position "A".

From experience, many other uses for the different positions of the jaw will be found.



TO CHANGE JAW POSITIONS

- 1) Turn the wing nut at least 7 complete turns counterclockwise. (See figure 5)
- 2) Place fingers in the recessed holes provided, lift upwards and rotate until desired position is reached. In doing so, be sure to raise lower jaw enough to clear its seat.

DUPLICATION OF REGULAR TYPE KEYS

NOTE: ALWAYS WEAR EYE PROTECTION WHEN OPERATING THIS MACHINE.

Select the proper key blank. Compare the head, length and key's cross section with the key to be duplicated.

Make sure the jaws are in the required position. See "Selection of Jaw Position".

We are now ready to duplicate the first key. Proceed as follows:

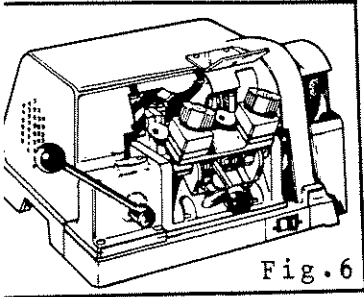


Fig. 6

- a) Move the carriage lever to the left as far as possible. (See figure 6)
- b) Place the key blank in the right jaw. Position key so that it is parallel with the front portion of the jaw. (See figure 7)

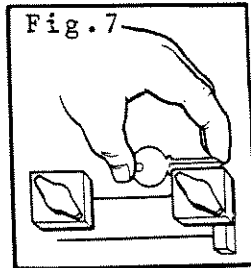
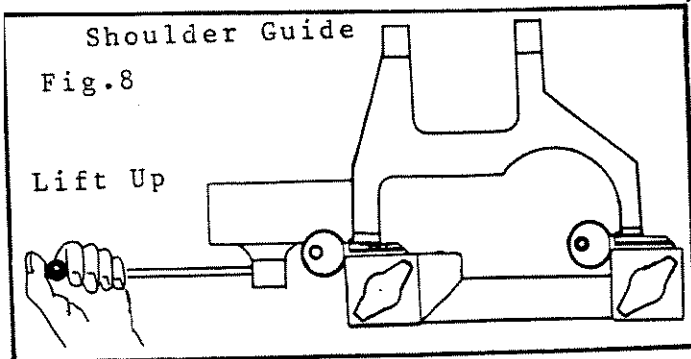


Fig. 7

- c) Swing shoulder guide down to rest on the blade of the key blank. Slowly move carriage lever clockwise to the right until the shoulder of the key blank butts up against the shoulder of the guide. (See figure 8)
- d) Use index finger to press down on the tip of the blank to make sure blank is properly seated in the jaw.
- e) Place original or sample key in left hand jaw, repeat 3D

f) After completing step 3D, swing the shoulder guide out of the way.

g) Turn the rocker switch to the on position, located at the base of machine. By pushing down on the carriage handle, pull the trigger out towards you, which releases the carriage assembly, and lift carriage assembly slowly, (See figure 9)

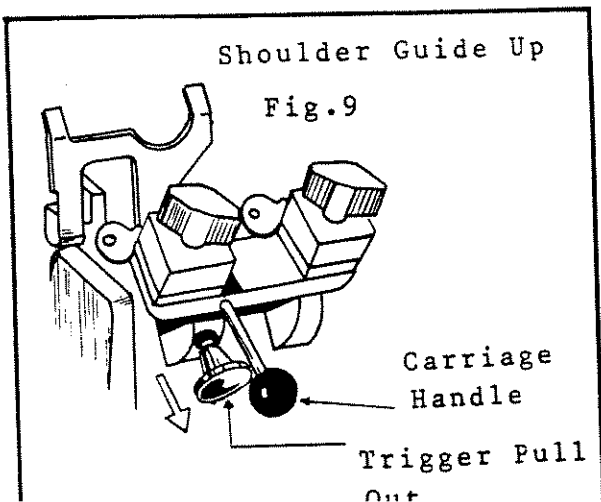


Shoulder Guide
Fig. 8

h) The carriage movement is controlled by the carriage lever. Slowly and smoothly, move the carriage lever clockwise (right) Erractic jerky movement will only stop the machine. Once you have made the pass to the right, move carriage to the left by moving carriage lever counter-clockwise. As this machine is supplied with a symetrical double sided milling cutter, increased cutter life can be achieved by alternating the carriage movement. You can start to cut tip first or by starting from the shoulder of the key. This will provide even wear.

i) Turn machine off and remove finished key by pushing down on the carriage handle until the trigger clicks into place. Then open jaws and extract key.

j) To deburr the key, turn the machine on, and pull key lightly, but rirmly through the rotating deburring brush.



Shoulder Guide Up
Fig. 9

Carriage
Handle
Trigger Pull
Out

DUPLICATION OF IRREGULAR KEYS

The majority of the keys presented for duplication are easily cut. The four way jaws simplify the job of holding keys of unusual irregular shape such as Ford, Schlage double sided, etc... The following instructions will help with the duplication of these keys.

SCHLAGE DOUBLE SIDED KEYS

Use jaw positions "A" or "W" for duplication of Schlage double sided keys.

- 1) Rotate jaws to position "A" or "W" as required.
- 2) For proper insertion of these keys, see "Selection of Jaw Position".
- 3) Repeat steps as outlined for duplication of Regular keys. As some of these keys are cut on two sides, reverse the original and sample key and repeat.

FOR FORD DOUBLE SIDED, BEST, FALCON AND OTHER KEYS WITHOUT SHOULDERS

- 1) Rotate jaws to "Standard" or "Wide" as may be required by the size of the key.
- 2) Place key blank in right hand jaw. The blank should be located in the jaw so the tip of the blank is parallel with back portion of the jaw.
- 3) Engage carriage as for cutting regular keys.
- 4) Using the carriage lever move carriage until the tip of the key butts up against the cutter. Maintaining this position, place sample key in left hand vise and slide key until it butts up against copying dog.
- 5) Turn machine "ON" and proceed as outlined in duplication of regular keys.
- 6) If key is cut on two sides, turn over and duplicate reverse side. In the case of Ford keys and most European and Japanese double sided keys, only the blank key needs to be turned as the cuts are the same on both sides.

NOTE: The forementioned procedures can also be used in duplicating broken keys that do not have shoulder to gauge from.

DUPLICATING CHICAGO DOUBLE SIDED KEYS

- 1) Set jaws to "Wide" or other position that would provide a secure grip. Some of the less popular Chicago keys (41N, 41FD, etc.) can be secured firmly in the "A" or "W" jaw position.
- 2) Proceed as for regular keys by using shoulder guide to gauge shoulders. Although the jaws provide a secure grip, it is advised that when duplicating, the carriage movement should be slower.
- 3) Once one side has been cut, turn the original key and blank over to duplicate the reverse side.
- 4) Remove finished key and deburr.

FOREIGN AUTO KEYS

Most European and Japanese auto keys are double-sided. With the four jaw positions available, the gripping of the keys should pose no problem. In most cases, the "Standard" and "Wide" positions may be used. With experience you will find the proper positions to cut these type of keys.

024 KEY MACHINE PART LIST

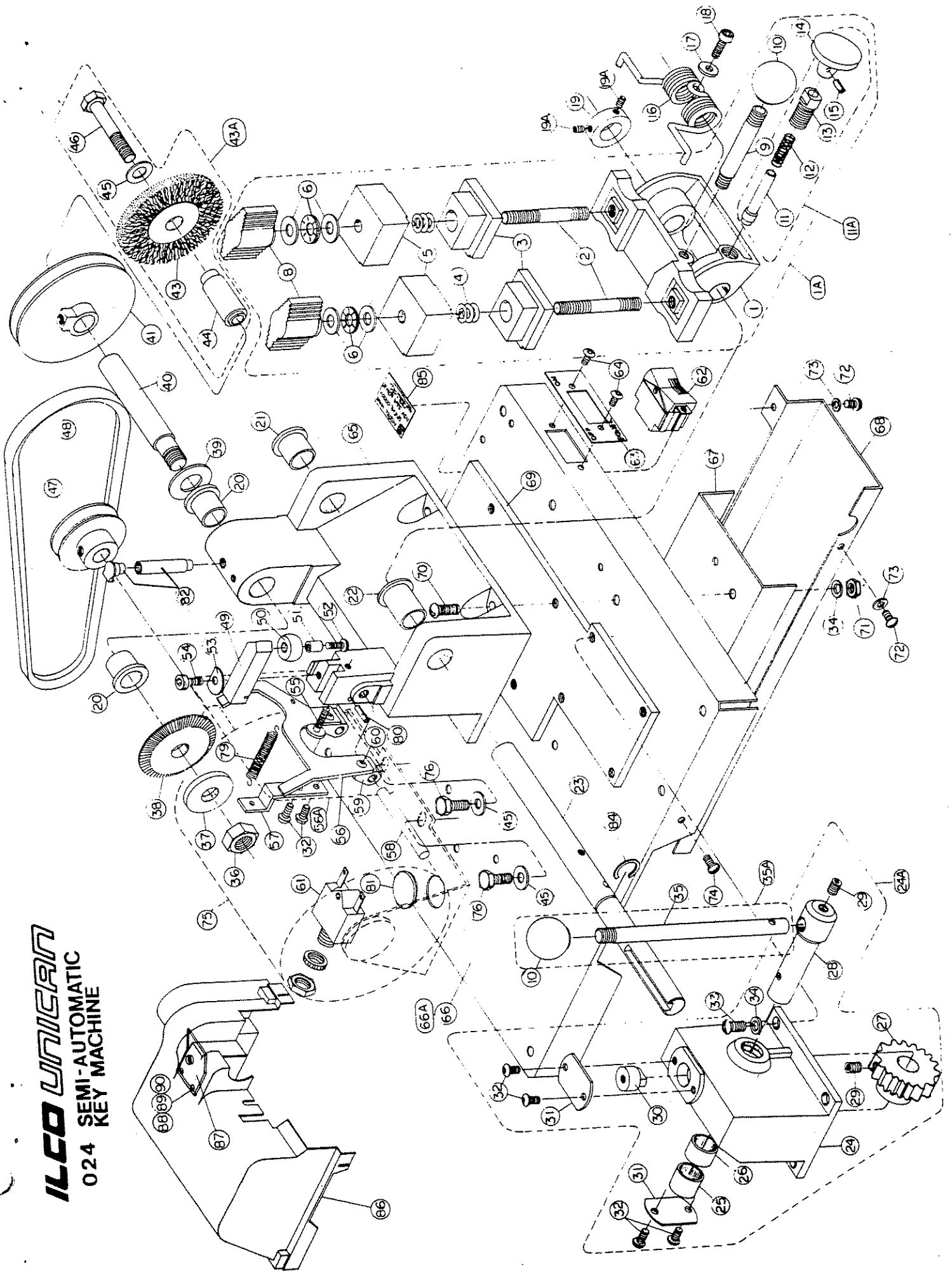
I U ORDER: SPECIFY MET. NO., PART NO., DESCRIPTION, SERIAL NUMBER, QUANTITY

Ref. No.	Part No.	Description	Qty†
1A	1105041S	Carriage Assy (consist of Nos. 1-15)	1
1	1105015A	Carriage Base	1
2	1103536A	Carriage Studs	2
3A	BF000039XX	4 Way Vise Jaw Assy includes: Lower Vise Jaws (2) Carriage Clamp Springs (2) Upper Vise Jaws (2) Thrust Washers (4) Thrust Bearings (2)	1
3		Lower Vise Jaws	2
4	1103495P	Carriage Clamp Springs	2
5		Upper Vise Jaws	2
6	BD0222XXXX	Thrust Bearing Set includes Thrust Washers (4) Thrust Bearings (2)	1
8	1103264A	Wing Nut (flco)	2
9	1106112A	Carriage Handle	1
10	129600	Knob	2
11A	1105186A	Trigger Assy (consist of 11-15)	1
11		Trigger Plunger	1
12		Trigger Spring	1
13		Trigger Body	1
14		Trigger Knob	1
15		1/16 x 3/8 Roll Pin	1
16	1105170P	Torsion Spring	1
17	194251	Flat Washer	1
18	174605	No. 10-32 x 1/2 Socket Hd Cap Screw	1
19	1105034A	Collar	1
19A	174449	No. 10-32 x 1/4 Socket Hd Set Screw	2
20	1103095P	Oilite Bushing 3/4 x 5/8 x 1", Flanged	1
21	1105032P	Oilite Bushing 13/16 x 5/8 x 5/8, Flanged	1
22	1105031A	Oilite Bushing Machined	1
23	1105111A	Carriage Shaft Rack	1
24A	1105057S	Gear Housing Assy (consist of parts 24-34)	1
24	1105056A	Gear Housing	1
25	1105030P	Oilite Bushing 13/16 x 5/8 x 1/2" Lg	1
26	1105028P	Oilite Bushing 13/16 x 5/8 x 5/8" Lg	1
27	1105101A	Pinion, Machined	1
28	1105161A	Pinion Shaft	1
29	1102056P	1/4-28 x 3/8" Socket Hd Set Screw	2
30	1105105P	Rack Key	1
31	1105036A	Cover Plate	2
32	1105115P	No. 10-24 x 3/8" Hd Cup Screw	6
33	172448	1/4-20 x 1/2" Lg RH Slotted Mach Screw	4
34	194253	1/4" Lock Washer	8
35A	1105012S	Bar Handle Assy (consist of parts 10 & 35)	1
35	1105011A	Bar Handle (Lever)	1
36	151090	1/2-20 LH Cutter Shaft Hex Nut	1
37	1106180P	Cutter Shaft Spacer	1
38	BC0048XXXX	11MC Cutter	1
39	194110	Fiber Washer	1
40	1106190P	Cutter Shaft (Spindle)	1
41	B2400048	Machine Pulley	1
43A	BF000211XX	Brush Kit (consists of 43-46)	1
43	129898	814 Nylon Brush	1
44	1103103A	Brush Adaptor	1
45	194080	5/16 Plain Washer	5
46	1103080P	5/16-18 x 2-1/4" Lg. Hex Hd Bolt	1
47	129085	Motor Pulley 2"-3L	1

† Quantity per machine.

Ref. No.	Part No.	Description	Qty†
48	129423	3L-180 V-Belt	1
49	1105065A	Cutter Guide	1
50	1103370P	Cutter Guide Roller	1
51	1103090P	Guide Roller Bushing	1
52	1105120P	No. 8-32 x 5/8 Lg. Button Hd Cap Screw	1
53	102703U	Washer	1
54	1106160P	10-24 x 1/2" Lg Socket Hd Cap Screw	1
55	129111	Guide Adjustment Screw	1
56A	1105070S	Key Guide Assy (consist of part 56, 59 & 60)	1
56	1105070A	Key Guide	1
57	1105025P	Key Guide Bracket	1
58	1106100P	Dowell Pin 1/4 x 2-1/2" LG	1
59	1106113A	Key Guide Housing	2
60	1106155P	No. 8-32 x 1/2 Button Hd Cap Screw	2
61	1103128P	Circuit Breaker	1
62	1103541P	Rocker Switch	1
63	1103149P	Decal On/Off	1
64	1103395P	No. 6-32 x 1/4 Button Hd Cap Screw	2
65	500290P	Body, machined and painted	1
66A	1106520S	Base Assy (consists of Nos. 66 & 67)	1
66	1106015A	Base Plate	1
67	1106010A	Base Support Plate	1
68	1106061P	Electrical Cover	1
69	1105008A	Aluminum Base Plate	1
70	1105130P	1/4-20 x 1-1/4 Lg. Round Hd. Mach. Screw	4
71	151077	1/4-20 Hex Nut	4
72	1103382P	No. 8-32 x 3/16 RHSM Screw	7
73	194206	No. 8 Lock Washer	4
74	1103379P	No. 8-32 x 1/4 Lg. Truss Hd Mach. Screw	3
75	129330	Motor 1/4HP x 110V	1
76	174289	1/4-20 x 3/4 Hex Hd Bolt	4
77	1103398P	1/4-20 x 5/16 Socket Hd Set Screw	1
79	1105171P	Key Guide Spring	1
80	1103362P	Roll Pin	1
81	1103464P	Snap Plug 7/8" Dia.	1
82	1106138A	Oil Cup Extension	1
83	1103268P	Oil Cup	1
84	1102033P	Crescent Ring	1
85	149001	Name Plate	1
86A	1105056S	Machine Cover Assy. (consists of Nos. 86, 90)	1
86	1105058A	Cover	1
87	1105060P	Plastic Chip Guard	1
88	172314	No. 10-32 x 1/2" Machine Screw	2
89	194006	No. 10 Lock Washer	2
91NS	1103290P	No. 10-32 Hex Nut	2
92NS	1103115P	3 Pronged Plug w/cord	1
93NS	1103172P	Two Wire Motor Cable	1
94NS	129014	Rubber Grommet	4
95NS	129074	K1 Hex Key (3/32")	1
96NS	129109	K2 Hex Key (1/8")	1
97NS	129395	K3 Hex Key (5/32")	1
98NS	149006	220V Motor (Dual Voltage)	1
99NS	129297	Name Plate (220V)	1
100NS	149007	12 Volt Motor	1
101NS	129050	Name Plate (110V)	1
102NS	129270	Motor Pulley	1
103NS	129358	12 Volt Starter Solenoid	1
104NS	129359	12V Fuse	1
105NS	129289	Fuse Holder	1
		12 AWG Wire	12Ft.

ILCO UNICAN
024 SEMI-AUTOMATIC
KEY MACHINE



GENERAL MAINTENANCE

LUBRICATION

There are five points of lubrication on your machine. Electric motor oil is suggested, however, a light grade of oil will do the job. Lubricate the following areas twice a month or if above normal usage, more often.

- 1) The two thrust washers located under the wing nuts.
- 2) One oil cup located on top of the machine for lubrication of the cutter spindle.
- 3) The oil cups located on the motor.

ADJUSTMENT OF COPYING DOG

The most critical area of adjustment on your machine is the copying dog. Periodically check by cutting a key for a sample cylinder. As the cutter areas wears the copying dog may need adjustment relative to the position of the cutter.

TO ADJUST DEPTH OF CUT

- 1) Set up machine with two identical key blanks. Operate machine as you would for duplicating. If the cutter just grazes the blank, it is properly adjusted. If the cutter bites hard into the blank, you need to adjust for a more shallow cut. If the cutter does not touch the blank adjust for a deeper cut. An allen wrench (provided with the machine) and a slotted screwdriver will be needed to adjust the copying dog.
 - a) Loosen the allen screw which holds the securing plate.
 - b) Turn the adjusting screw clockwise for a deeper cut and counterclockwise for a shallow cut. After checking with two blanks, cut a key for a sample lock. The duplicate cuts may also be checked using a special or pointed micrometer to measure depth of cut and compare with cuts in the original and duplicate key.

"V" BELT ADJUSTMENT

A maximum of 1/2" slack is recommended.

CLEANING

Your machine should be kept clean of all filings and dust. The most critical areas are the carriage jaws and shafts. A one inch paint brush is ideal to brush these areas of the machine. The shafts should be wiped periodically with a lightly oiled cloth. We suggest brushing the jaws often as even a filing can alter the accuracy of the machine.